support in Preston's observations on the Zeeman effect.

He took a keen interest in the development of the kinetic theory of gases, to which he made notable contributions. In 1867 he arrived at his estimate of the size of molecular dimensions, which is substantially that made by Kelvin a year or so later, and by Loschmidt two years previously.

By utilising his value of the mass of the atom Stoney was able to give, at the Belfast meeting of the British Association in 1874, the first calculation of the atomic charge in electrolysis. To this quantity he gave the name *electron*, which is now very generally adopted, and has proved a most suitable term. It was to the orbital movements of the electrons in the atoms, to which, as we have seen, Stoney attributed in 1891 the spectral lines and their various singularities.

Stoney invariably invented a nomenclature for the quantities he was dealing with, where none already existed. Such new terms are continually to be met with in his writings. Many of them have been found by others to be most convenient, and have consequently taken root in science, as, for example, his term *wavelet*, employed advantageously in his papers on microscopic vision, in connection with his method of resolution into plane wave fronts. This facility in suggesting suitable terms proved most useful when serving on the now famous committee of the British Association which devised our present system of electrical units, and of which he was one of the early members.

Stoney was the first to see that the movements in Crooke's radiometer were not due to radiation directly, but arose from unsymmetrical gaseous impacts resulting from unequal heating of the surfaces of the rotating vanes. His original explanation, however, required modification, afterwards supplied by Maxwell and Osborne Reynolds.

He introduced into cosmical physics considerations of a limit to each planet's power of retaining a gaseous envelope, which are of the highest interest in connection with the moon and with Martian questions. He showed that helium, as well as hydrogen, must eventually escape from the earth's atmosphere, a fact with important bearings on the past history of the radio-activity of the materials of the earth's crust.

Stoney's ideas were sometimes rather ahead of the recognised requirements of the day, and consequently paid the penalty of neglect which unfortunately sometimes happens in such cases; indeed, one of his papers on a periodic scheme of the elements, predicting, among other points, the atomic weights of the "inert" group, remained unpublished on the mistaken advice of one of the greatest of his contemporaries. This very scheme is now thought by many to be the most satisfactory of any yet devised.

He was essentially of a philosophic turn of mind, and wrote several papers on ontology and kindred subjects, but at the same time he took delight in all new developments of both industry and science, rejoicing that his span of life had coincided with what he considered would probably prove in the world's history to have been the period of most rapid advance, flowing from the first systematic application of scientific method on an extended scale to industrial progress. He would describe how as a child he had witnessed the first use of illuminating gas in the streets of Paris, and would with evident pleasure recount the many achievements of man in his time.

Stoney was born in King's Co., Ireland, in 1826. His mother was a Blood of County Clare. His ancestry belongs to the Protestant settlers in Ireland of the sixteenth and seventeenth centuries, a class from which has sprung so many of our great men of science, including Hamilton, Stokes, and Kelvin, but which, through economic and political causes, is now fast disappearing. He came from strong stocks on both sides, which have provided an unusually large number who have made their mark, including four Fellows of the Royal Society.

He was educated at Trinity College, Dublin, taking high place in his examinations. He was anxious to devote his life to collegiate work, and sat for the fellowship examination, the entrance in Trinity College to this, but, as in many other cases, his brilliant intellect was lost to his university through the unfortunate working of an examination system, now happily to be abolished.

For many years he held the post of secretary to the Queen's University of Ireland, a position affording him small leisure for pursuing his scientific researches. To his official duties he gave a whole-hearted service. This involved much organisation of the scattered colleges which constituted that university, and it was with unfeigned regret he saw the work of these years abandoned on its dissolution.

All who came in contact with Johnstone Stoney were impressed with his sincerity and devotion to all which makes for truth and righteousness. He was veritably a prophet as of olden time. Younger scientific men who have had the privilege of knowing him will not easily forget his kindliness and encouragement.

He died on July 1, after a prolonged illness, in his eighty-sixth year, at his residence at Notting Hill Gate, where he had lived for some years.

F. T. T.

NOTES.

A NEW attempt is being made to work the alluvial goldfield in Helmsdale, in eastern Sutherland. The existence of gold there has long been known, and some of the gold of the ancient ornaments found in north-eastern Scotland may have come from that district. The first modern attempt to work the field was in 1869, when gold was obtained in the Kildonan and Suisgill Burns, two tributaries of the Ullie, the main stream of Helmsdale. Royalty was paid on about 3000*l.* of gold, but the amount obtained is said to have been considerably higher. The largest nugget was found in the Kildonan Burn, and weighed two ounces. The richest alluvial deposits were in the Suisgill Burn, a higher tributary of the Ullie. This burn flows over mica schists belonging to the Moine system, which have been invaded by granite dykes. The existence of gold in this granite was recorded by Bryce in 1870. The workings were stopped at the end of 1869 owing to damage done to the fishing and the farmers. A serious effort to reopen the field is now being made by the Duke of Sutherland. Gold is being obtained, but whether it occurs in paying quantities has still to be proved.

DR. H. N. DICKSON, president of the Royal Meteorological Society, in a letter to *The Times* of Thursday, July 6, raises the question of increasing the utility of the daily forecasts of weather issued by the Meteorological Office by more effective distribution. His letter suggests the general restoration of the afternoon service of weather forecasts, which is now only operative in the summer months. "Presumably these could be issued all the year round, and they could easily reach the general public before the arrangements for the next day's work were finally completed, provided proper facilities for distribution were given." The history of the public announcement of weather forecasts in this country includes some interesting chapters, and the last of them carries the story to the present day from the re-establishment of the issue of forecasts in 1879 by the Meteorological Council, which at that time was composed of Prof. Henry Smith, Warren de la Rue, Captain Evans, Francis Galton, Prof. G. G. Stokes, and Sir R. Strachey. After the experience of thirty-two years, it is time that a new chapter was begun in which the question of the distribution of forecasts should receive its share of attention.

With an extraordinary regularity, all the aviators in the European Circuit—with the exception of Valentine, who came to earth at Brooklands—recrossed the Channel in the last stage but one from Hendon to Calais on July 6. The following day Paris was reached by six of the competitors, the remaining three, Tabuteau, Védrines, and Barra, coming in at intervals during July 8, owing to various minor mishaps *en route*. The winner was Naval-Lieutenant André Conneau (who flew under the pseudonym of "Beaumont"), who completed the circuit in 58h. 36m. on a Blériot monoplane fitted with a 50 horse-power "Gnome" motor and a "Normale" propeller. His time works out at an average of more than 17 miles an hour. Those who obtained the next six places were Garros (Blériot), 62h. 18m.; Vidart (Déperdussin), 73h. 32m.; Védrines (Morane), 86h. 34m.; Gibert (R.E.P.), 89h. 42m.; Kimmerling (Sommer), 93h. 10m.; and Renaux (Farman biplane), 110h. 44m. Barra (M. Farman biplane) and Tabuteau (Bristol biplane) also finished. Renaux deserves a special word of praise, as he carried a passenger, M. Senoncques, throughout the race.

A spell of ideal summer weather has occurred recently over England, where in places the thermometer in the shade has risen to between 85° and 90°. For the country generally it is unfortunate that the high temperature was preceded by dry weather, and rains are now greatly needed. At Greenwich the thermometer in the shade exceeded 80° on the four days from July 5 to July 8, and on July 6, 7, and 8 it exceeded 86°, the highest temperature being 88°, on July 8. In the sun's rays the thermometer was 144° both on July 7 and 9. The shade temperature has not risen so high at Greenwich since the summer of 1906, when, it will be remembered, a reading of 94·3° was recorded on August 31, and on the three following days the readings were respectively 91·9°, 93·5°, and 91·0°, the last three observations being a record for September. The temperatures recently experienced are not excessive for July; in 1900, on July 16, the reading was 94·0° at Greenwich; in 1896, on July 14, 91·1°; in 1887, on July 4, 92·2°; in 1885, on July 26, 90·2°; and in 1881, on July 15, 97·1°, the latter being the highest temperature recorded at Greenwich since 1841. In the recent hot spell the thermometer registered 90° in London at Camden Square, at Epsom, and at Cullompton. A decided change of temperature set in during the evening of July 8, and the weather became much cooler, although the conditions continued dry. On July 11 the shade reading again touched 80° in parts of London, and a return of the hot weather seemed probable. The temperature experienced in England falls considerably short of that in the United States, where in many parts the sheltered thermometer has exceeded 100°. The official records of the U.S. Weather Bureau, which are not available in this country yet for a later date than July 2, show a temperature of 104° on that day at Marquette, Mich.; 104° at Valentine and North Platte, Nebr., on June 29; and 108° at Tuma, Ariz., on June 28 and 26. The hot spell in England can in no way be associated with the excessive heat in the United States. It is not conceivable that the heated air could traverse the whole extent of the North Atlantic. The atmospheric conditions were at the time similar in England and America, the type of weather being in both cases anticyclonic and the movement of the air very sluggish.

Sir Henry Morris, Bt., has been elected president of the Royal Society of Medicine for the session 1911–12.

Prof. A. E. Mettam, principal of the Royal Veterinary College, Dublin, has been elected president of the Royal College of Veterinary Surgeons for the ensuing year.

Science announces that Dr. Leonhard Stejneger has been appointed head curator of the department of biology in the U.S. National Museum to succeed Dr. F. W. True.

The council of the Royal Society of Arts has elected Lord Sanderson, G.C.B., chairman for the year 1911–12. Lord Sanderson has been a member of the society for more than thirty years.

Dr. W. J. S. Lockyer, whose recent articles upon the British solar eclipse expedition have interested many readers of Nature, has just returned home by the *Mauretania*, quite recovered from the attack of fever which he had in Fiji.

The death is reported, in his fifty-third year, of Dr. Julian W. Baird, since 1886 professor of analytic and organic chemistry at the Massachusetts College of Pharmacy, and dean of that institution since 1895. He had previously been on the scientific staff of the University of Michigan and Lehigh University successively.

Mr. R. H. Chandler, of Kearsbrook, Belvedere, Kent, desires to direct attention to an exceptionally good section of the plateau drift of the chalk downs, exposed in a pit which has been recently opened by Mr. Benjamin Harrison, of Ightham. The section is in a field behind Two Chimney House, about half a mile from Terry's Lodge, near Wrotham, and is described as showing between 2 and 3 feet of plateau flints in a sandy clay, resting in pockets in the clay-with-flints.

The Paris correspondent of *The Morning Post* states that the inauguration of the Aërotechnic Institute, near Versailles, founded by M. Deutsch de la Meurthe, who has endowed it with a capital of 20,000*l*. and a yearly income of 600*l*., took place on July 6. The institute has been provided with all the apparatus necessary for experiments in aëronautics and aviation. Speeches were made by M. Steeg, the Minister of Public Instruction, M. Liard, Vice-Rector of the Paris Academy, and Prof. Appel, Dean of the Faculty of Sciences in the University of Paris.

We are informed by the Royal Society that the Mackinnon studentships for the ensuing year have been awarded to Mr. T. F. Winmill, of Magdalen College, Oxford, for research in structural chemistry, and to Mr. T. Goodey, of Rothamsted Experimental Station, for research on protozoa in relation to the fertility of soil. The Joule studentship for the ensuing period of two years has been awarded to Mr. Albert Eagle, Imperial College of Science, for research on the thermal relations of spectra of gases and on cognate subjects.

At the meeting of the Royal Society of Edinburgh on Monday, July 3, the Makdougall-Brisbane prize for the biennial period 1908–9, 1909–10, was awarded to Mr. E. M. Wedderburn for his series of papers bearing upon the temperature distribution in fresh-water lochs, and upon seiche phenomena which occur at the interface of two layers of different density, whether that difference be due to difference of temperature or difference of salinity, published in the Proceedings of the society within the prescribed period, and also in the Transactions and Proceedings before and after that period.

A STRONG earthquake was felt at San Francisco and throughout a large part of central California and Nevada on the afternoon of July 2, and was evidently the most severe of all the successors of the great shock of 1906. The total damage was comparatively slight, but many buildings were cracked, part of the cornice of the Bank of California fell, and the coping of the Hall of Justice was cracked. The latter was one of the few buildings which escaped uninjured in 1906.

ON July 9, at 2h. 2·5m. a.m., a strong earthquake occurred in Hungary, the epicentre being at or close to Kecskemet, which lies about fifty miles south-east of Budapest. In this town, of some 50,000 inhabitants, nearly every house was damaged, some so seriously that they collapsed. In the neighbourhood of Kecskemet ten persons were killed by the fall of a house, and two others at Nagy Körös, twelve miles to the north-east. The shock was felt over a large part of Hungary, and was evidently of unusual strength when compared with previous movements in the same seismic centre. In his catalogue of Hungarian earthquakes for 1865–84, Fuchs records only seven slight shocks at Kecskemet or in the surrounding district.

ARRANGEMENTS have been made to hold the autumn meeting of the Iron and Steel Institute at Turin on October 2 and 3 next. On October 2 the members of the institute will be welcomed by the civic authorities of Turin, the Chamber of Commerce, and the reception committee of the Associazione fra gli Industriali Metallurgici Italiani. After the reception, the Carnegie gold medal for research for 1910 will be presented to M. Félix Robin, of Paris, and papers will be read and discussed. At the conclusion of the meeting, beginning on October 4, a tour in Italy has been arranged to visit Genoa, Pisa, Rome, Naples, Florence, Milan, and other places. Members desirous of attending the meeting must signify their intention on reply forms, to be obtained from the secretary of the institute, not later than August 22.

FROM a circular just received from South Africa we find that the ninth annual meeting of the South African Association for the Advancement of Science was to be held last week at Bulawayo under the presidency of Prof. P. D. Hahn. The four sections, with the name of the president in each case, are as follows:—Section A, astronomy, mathematics, physics, meteorology, geodesy, surveying, engineering, architecture, and irrigation; president, the Rev. E. Goetz. Section B, chemistry, geology, metallurgy, mineralogy, and geography; president, Mr. A. J. C. Molyneux. Section C, bacteriology, botany, zoology, agriculture, forestry, physiology, hygiene, and sanitary science; president, Dr. E. A. Nobbs. Section D, anthropology, ethnology, education, history, mental science, philology, political economy, sociology, and statistics; president, Mr. G. Duthie. The South African medal and fund for 1910 has been awarded to Dr. L. Peringuey, director of the museum, Cape Town.

THE United States Weather Bureau is forming in its library, at Washington, a collection of meteorological photographs, and will welcome additions thereto from all parts of the world. The following classes of pictures are among those desired:—(1) views of meteorological offices, observatories, and stations; (2) pictures of meteorological apparatus; (3) portraits of meteorologists—views of their homes and birthplaces; (4) views showing the effects of storms, inundations, freezes, heavy snowfall, &c.; (5) cloud photographs; (6) photographs of optical phenomena (rainbows, halos, Brocken specter, mirage, &c.); (7) photographs of lightning and its effects; (8) photographs of meteorologically interesting pictures in old books, or of early prints and paintings (*e.g.* contemporary pictures of the damage wrought by the great storm of 1703 in England). Persons who are willing to present such pictures to the Weather Bureau, or will furnish them in exchange for Weather Bureau publications, are requested to address: Chief U.S. Weather Bureau (Library), Washington, D.C.

DR. W. T. SHEPHERD has contributed to the Psychological Monographs, issued in connection with *The Psychological Review*, a paper entitled "Some Mental Processes of the Rhesus Monkey." His experiments lead him to conclude that this monkey is able to discriminate colours with speed and precision when it is presented with foods (rice) variously coloured red, pink, yellow, and green; that it can be trained to discriminate between double-octave differences in pitch of musical tones; that, alike in the formation and in the inhibition of habits, it is superior to the raccoon and far superior to various other mammals that have been examined. Dr. Shepherd believes that monkeys learn only to a limited extent by imitation, and that, although they may acquire a generalised mode of action when confronted with a series of similar problems, there is no evidence that they form true general notions or can truly reason.

The Japan Magazine for last April contains an interesting article, by Mr. Mikimoto, on the culture pearl industry, describing the methods employed in the Bay of Ago. Every year during the months of July and August small pieces of stone are deposited in those parts of the sea where the pearl oyster is abundant. In the third year of the oyster's life it is removed from the sea, and into the shells are introduced small pearls or pieces of nacre to serve as nuclei for the pearls. These are allowed to develop for at least four years, when they are taken up and the pearls recovered. The success of the industry is much restricted by the great mortality among the oysters due to what is called "red currant," an accumulation of microscopic organisms in the water, and a seaweed known to the Japanese as Mirumo (*codium*), which by its growth smothers the young oysters. These artificially grown pearls are said to resemble those of natural growth in colour, lustre, and symmetry. It is interesting to note that most of the work in this industry is done by women, who are believed by the Japanese to be able to remain longer under water and to perform more and better work than men.

THE report of the Lancashire Sea-fisheries Laboratory and Fish Hatchery for 1910 contains a number of interesting papers dealing both with economic and with more purely scientific subjects. Mr. James Johnstone's memoir on internal parasites and diseased conditions of fishes contains a detailed description of a new genus and species of trematode (*Paracotyle caniculae*), and Mr. W. J. Dakin provides a note on a new sporozoan from the whelk, which he also regards as belonging to a new genus and species (*Merocystis kathae*). Prof. Herdman, in conjunction with Mr. A. Scott, contributes part iv., dealing with the year 1910, of his report on the intensive study of the marine plankton around the south end of the Isle of Man, and in conjunction with Mr. W. Riddell gives an account of some plankton observations made on the west coast of Scotland, and compares them with those made in the Irish Sea. There is, indeed, much truth in the remark of these authors that, "for a complete understanding of the plankton changes throughout the year in the Irish Sea, it is essential that we should have full information, not merely as to the larger organisms of the zoo-plankton, but as to the planktonic conditions in general in both surface and deeper water along the north coast of Ireland and off the west of Scotland."

A PAPER on the educational treatment of stammering children, by Dr. J. T. McHattie, with discussion thereon, has been issued by the Medical Officers of Schools Association, and contains much information on the causation and remedial treatment of this distressing condition.

MESSRS. GOETSCH, CUSHING, AND JACOBSON publish an important experimental and clinical study on the functions of the hypophysis cerebri, a small organ situated at the base of the brain. If either experimentally or in certain cases of brain disease an increased discharge of the secretion of the posterior lobe take place, an increased amount of sugar appears in the blood, apparently indirectly through the action of the secretion in causing an increased discharge of the glycogen stored in the tissues. Later an increased tolerance for sugars is established, often with a tendency towards general obesity (Johns Hopkins Hosp. Bull., xxii., No. 243).

WE published recently (June 29) a short article on the progress of radiography in medical diagnosis, and alluded in particular to the work of the staff at Guy's Hospital in their investigation of pathological conditions of the intestine. In this connection we note the appearance of a new paper, a reprint of which has reached us, by Dr. A. C. Jordan, medical radiographer to Guy's Hospital (*Brit. Med. Journ.*, May 20), in which he shows that it is often possible to detect duodenal obstruction by the X-ray method after giving the patient a bismuth meal. Diseases of the duodenum are often extremely obscure, and this new method of diagnosing the condition will be welcomed both by the medical profession and the sufferers from such complaints.

To the Entomological Research Committee (Africa) the Natural History Museum owes a beautiful enlarged model of the tropical rat-flea (*Xenospylla cheopis*), which appears to be the main vehicle in the conveyance of bubonic plague to the human subject. The species is believed to have been a native of North Africa, but is now practically cosmopolitan. The model is about 12 inches in length.

WE have been favoured with a copy of part xxvi. of the elaborate work in course of publication by Messrs. Friedlander, of Berlin, under the auspices of the Royal Prussian Academy of Sciences, entitled "Das Tierreich," of which Prof. F. E. Schulze is editor. The first part was issued in 1896, and from the commencement the editor has been greatly assisted by Prof. Fritz Edler von Maehrenthal, of the aforesaid academy, whose death at Berlin on August 28, 1910, is deplored in a special leaflet, with portrait, accompanying the present issue. Dr. von Maehrenthal was born at Olmütz, Moravia, on January 2, 1857, and, after spending his youth at Gratz, eventually became chief official of the Prussian Academy. In the present issue of the "Tierreich" Prof. L. G. Neumann treats of the acarines of the family Ixodidæ in the detailed manner characteristic of the work as a whole. We are likewise indebted to Messrs. Friedlander for a sale catalogue of works and papers on recent and fossil mammals.

THE June number of *The Quarterly Journal of Microscopical Science* (vol. lvi., part iv.) contains a full description, by Mr. R. Kirkpatrick, of the remarkable sponge *Merlia normani*, which the author has now obtained in quantity from a depth of 60 fathoms near Porto Santo, Madeira. The nature of this enigmatical organism seems likely to give rise to as much controversy as did that of Haliphysema or Astrosclera. Mr. Kirkpatrick has at length settled down to the view that it is a siliceous sponge of the monaxonellid family Haplosclerídæ, which, in addition to the typical skeleton of siliceous spicules, secretes a basal skeleton of calcite. This basal skeleton takes the form of a horizontal perforated lamina, and the perforations are filled with what is believed to be sponge tissue. The evidence brought forward for this view, if not quite conclusive, is certainly very strong. The upper part of the organism, which rests upon the basal lamina, is an undoubted haplosclerid sponge, characterised by a new type of microsclere, to which the name "clavidisc" is applied, a name to which exception might perhaps be taken on the ground that the spicule is characterised, not by anything resembling a key, but by something resembling a keyhole. The author considers that the canal system of the sponge belongs to a new type, to which he gives the name "hymenopylus," characterised by the fact that the very wide openings of the flagellate chambers are guarded by a delicate sphincter membrane. It is probable that the flagellate chambers of most sponges are "hymenopylous," and the condition is very well known in the Calcarea, but, of course, such a structure can only be made out in exceptionally well-preserved material. The arrangement of the prosopyles, consisting "simply of spaces between the fused rays of the stellate bases of the collar-cells," which the author is led to believe may possibly occur among other tetraxonid sponges, has, of course, been known for many years in the common British *Halichondria panicea*. In short, the canal system appears to be of the normal eurypylous type so common amongst the Monaxonellidæ, and it was hardly necessary to coin a new term for the special benefit of this sponge. The paper is admirably illustrated, and will be read with great interest by all spongologists.

EXPERIMENTS described by Dr. R. Seeger in the *Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften*, Vienna (vol. cxix., part 9), indicate that hemiparasites of the tribe Rhinantheæ transpire much more freely than autotrophic plants. Thus *Euphrasia Rostkoviana* and *Odontites verna* gave off 19 milligrams of water in 10 minutes, as compared with 6 milligrams transpired by *Veronica chamaedrys*, 1·8 by *Hydrangea hortensis*, and 0·48 by *Rhododendron hybridum*.

A FULL description of the forestry court at the United Provinces Exhibition held at Allahabad in December last year appears in *The Indian Forester* (March and April). The exhibition comprised timber specimens and products, trophies of sport, and other forest products which occupied the three main buildings. In addition there were installed a turpentine distillery, a wood-pulp laboratory, woodworking machinery, a lac factory, various artisan demonstrations such as the Hoshiarpur wood carvers, and an exposition of katha extraction. The success of the section may be largely accredited to the energetic president, Mr. P. H. Clutterbuck.

A SHORT note on comparative trials with calcium cyanamide, ammonium sulphate, nitrate of lime, and nitrate of soda as artificial fertilisers, is contributed by Mr. F. J. Chittenden to the Journal of the Royal Horticultural Society (vol. xxxvi., part 3). Calcium cyanamide or nitrolim and nitrate of lime are both products manufactured at a high electrical pressure and compete individually with the other two fertilisers tested. The results obtained with turnip crops indicate that the first two are of about equal value, but are slower in their influence than the last two. Nitrate of lime suffers from hygroscopic defects, and provides weight for weight rather less nitrogen than nitrate of soda. Calcium cyanamide also presents physical difficulties which have been obviated by the production of a hydrated form.

THE account communicated by Mr. T. G. B. Osborn in *The Annals of Botany* (vol. xxv., No. 98) of the organism, *Spongospora subterranea,* producing "corky" or "powdery scab" of potatoes, is interesting not only for its economic aspect, but also for the cytological results recorded. In the earliest stage, the organism was observed as a uninucleate amœba in the meristematic potato cells. The amœbæ divide to provide units for the invasion of new cells, as also to form several individuals in each potato cell. Eventually the various amœbæ in a cell unite to form a plasmodium. Later on nuclei become very apparent in the plasmodia before fusion occurs in pairs (karyogamy); two karyokinetic divisions ensue, after which the protoplasm round each nucleus rounds off into a uninucleate spore. The author concludes that Spongospora is a member of the Plasmodiophoraceæ, which group has many points of relationship to the Mycetozoa, differing chiefly in the parasitic habit, the method of division of the vegetative nuclei, and by the less constant presence of a flagellum on spore germination.

MR. R. CORLESS contributes to *Symons's Meteorological Magazine* for June a useful article on the distribution of rain in a barometric depression. It is known that the heaviest rain usually falls on the left side of the path of the centre of a depression, irrespectively of the direction of its motion. The reason for this is shown by a diagram and a simple formula. For the sake of argument, the author considers a depression in which the wind at some altitude is blowing tangentially to the isobars, and for the immediate purpose all that is required is that when the path of the air is straight the relation $vd=$constant holds good between v, the wind velocity, and d, the distance between the consecutive isobars. When the path is curved cyclonically, the value of v as determined from this equation is theoretically too large; the error increases with increasing curvature, and the maximum curvature is shown to be on the left side of the path of the centre. The air has no alternative but to rise, and an ascending current of air is admittedly a cause of rain; it is in this region (the left front quadrant of the depression) that heavy falls of rain actually occur. Of course, rain falls in other parts, but its origin may be quite different from that here suggested.

UNDER the title "La Temperatura in Italia," the Italian Central Meteorological Office has published, as part i. of vol. xxxi. of its *Annales*, a very complete summary of the mean temperature of Italy. The main part of the volume is devoted to tables giving the mean temperature for decades, wherever possible, for each year of the period 1866–1906. The mean temperature is computed from observations taken at 9h. and 21h., and from daily readings of maximum and minimum thermometers, by the formula $\frac{1}{4}(9+21+\text{max.}+\text{min.})$. Data are given for about 120 stations, though only a small number of these can supply information for the whole period. The later chapters contain summaries of the information given in the main tables. We find in them values of averages and extremes for months, seasons, and years. Numerous plates showing the geographical distribution add greatly to the value of the work. The preparation of the data has been in the hands of Dr. Filippo Eredia, whose name is a guarantee for the excellent arrangement of the results.

IN 1908 a number of experiments carried out by Mr. H. E. Watson, of Trinity College, Cambridge, added about 200 new lines to the spectrum of neon, bringing the total number of lines to 321. Further research, the results of which are published in the June number of *The Astrophysical Journal* (vol. xxxiii., No. 5, p. 399), has shown that certain regularities, suggesting subdivision into "series," occur in the oscillation frequencies of these lines. The lines appear to be divided naturally into three groups, one of 252 lines extending from the extreme red to λ 4071, a second of 29 lines extending from λ 3754 to λ 3370, and a third consisting of 40 lines between λ 3167 and λ 2736. On investigating the oscillation frequencies, Mr. Watson finds that there are distinct indications of regular differences which suggest the existence of a principal and two subordinate series, in which the lines are grouped in triplets and quadruplets with constant frequency differences, the whole arrangement resembling the blue section of the red spectrum of argon investigated by Rydberg. The investigation of these brighter lines and of the numerous weak lines is being continued, and it is hoped that, by methods not purely mathematical, a further elucidation of this remarkable spectrum will result.

IN the abstract of Prof. Silvanus P. Thompson's paper on harmonic analysis, printed in NATURE of June 29 (p. 607), it was stated that the process described to find the coefficient of any term in the harmonic series set down was subject to a limitation. This limitation was expressed in the abstract issued by the Physical Society, but was omitted in the abridgment published in NATURE in order to bring the report of the society within reasonable limits of space.

OUR ASTRONOMICAL COLUMN.

A NEW COMET, 1911*b*.—A telegram from the Kiel Centralstelle announces the discovery of a new comet by Mr. Kiess at the Lick Observatory on July 6. At 15h. 23·7m. (Lick M.T.) the position was

R.A.=4h. 51m. 51·8s., dec.=35° 15′ 2″ N.

A later telegram gives the position on July 7, at 14h. 39·7m. (Lick M.T.), as

R.A.=4h. 52m. 54s., dec.=34° 52′ 17″ N.

The comet is fairly bright, magnitude 9·0, and has a tail, but its position, about 1½° north of ι Aurigæ, makes it a difficult object to observe in these latitudes. At 1 a.m. the altitude of ι Aurigæ is about 8°, and its direction is north-east.

NOVA LACERTÆ.—No. 5, vol. xxxiii., of *The Astrophysical Journal* contains a note by Prof. Frost discussing the observations of Nova Lacertæ and its spectrum, made at the Yerkes Observatory between December 31, 1910, and May 6.

A suspected nebulosity around the star, shown on the earlier photographs, was not confirmed by later observations with the telescope readjusted. Despite its distinctly red colour, the light from the nova was found to be strongly actinic, a phenomenon accounted for by the considerable extension of the spectrum into the ultra-violet. With the 40-inch telescope, Prof. Barnard found that a sharp crimson image of the nova, due probably to Hα, was formed 9 mm. further from the object-glass than the usual image, which conformed with the ordinary stars.

Two series of spectrograms were secured, one with the Bruce spectrograph, the other with an objective-prism